

23. The method of claim 21, wherein the active layer is formed by depositing polycrystalline silicon.

24. The method of claim 23, wherein the polycrystalline silicon has a thickness of between about 400 and 800 $\text{\AA}$ .

25. The method of claim 24, wherein the active layer is formed using chemical vapor deposition.

26. The method of claim 21, wherein the active layer is formed by depositing amorphous silicon and by crystallizing the amorphous silicon by laser annealing.

27. The method of claim 21, wherein the exposed portion of the active layer is formed by the steps of:

depositing a layer of silicon dioxide on the gate insulating layer so as to cover the active layer;

depositing a conductive material on the silicon dioxide layer; and  
patterned the conductive material and the silicon dioxide layer to form an insulating layer and a gate over a selected portion of the active layer.

28. The method of claim 27, wherein the gate insulating layer and the gate have a thickness of about 500-1500 $\text{\AA}$  and, about 1500-2500 $\text{\AA}$ , respectively.

29. The method of claim 21, wherein the hydrogen ions are implanted with implantation energies between about 50 and 150KeV.

30. The method of claim 21, wherein said hydrogen ions are implanted at a dose of between  $5 \times 10^{14} - 5 \times 10^{16}$  ions/cm<sup>2</sup>.

31. The method of claim 30, wherein the hydrogen ions heat the temporarily excited region to a temperature between about 200~300 degrees Celsius.

32. The method of claim 29, wherein the hydrogen ions heat up the temporarily excited region to a temperature between about 200~300 degrees Celsius.

33. The method of claim 21, wherein three hydrogen ions are implanted in the active layer and simultaneously form the impurity region.

34. The method of claim 21, wherein the hydrogen ion implantation time is proportionately related to the size of the active layer.

35. A method of fabricating a thin film transistor, comprising the steps of:  
forming an impurity region for a source and a drain region by implanting impurity ions into the impurity region; and  
activating the impurity ions simultaneously with the step of forming the impurity region by maintaining the impurity region in an excited state using ion particle mobility and excitation.

36. The method of claim 35, wherein the impurity region is formed by heavily doping the region with n-typed impurities.